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ABSTRACT

The effects of gender, grade point average (GPA), and ethnicity on emotional intelligence were examined using an inventory called the Emotional Intelligence Inventory Revised (M. Tapia and J. Burry-Stock, 1998) in this study. The inventory was completed by 319 students (162 boys, 157 girls) at a college preparatory bilingual school in Mexico City, and data were analyzed using a multivariate factorial model with 4 factors of Emotional Intelligence as dependent variables (empathy, utilization of feelings, handling relationships, and self-control). There was an overall significant main effect of gender and a significant two-way interaction of gender-GPA. The gender-GPA interaction was disordinal, and therefore the significant main effect was not further analyzed. The interaction was found to be significant for handling relationships and self-control. In handling relationships, GPA levels influenced male students. Male students in the 3.00 to 3.49 range scored lower than all other male students with GPAs greater than 2.00. In self-control, GPA levels influenced female students. Female students with a GPA of 3.5 to 4.0 scored significantly higher than all other female students with GPAs below 3.00. (Contains 4 tables and 21 references.) (Author/SLD)

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EMOTIONAL INTELLIGENCE: THE EFFECT OF GENDER, GPA, AND ETHNICITY

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Paper presented at the Annual Meeting of the
Mid-South Educational Research Association,
Little Rock, Arkansas
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ABSTRACT

The effects of gender, GPA, and ethnicity on emotional intelligence were examined by use of an inventory called the Emotional Intelligence Inventory Revised. The inventory was completed by 319 students, 162 boys 157 girls, at a college preparatory bilingual school in Mexico City and data were analyzed using a multivariate factorial model with four factors of Emotional Intelligence as dependent variables (empathy, utilization of feelings, handling relationships, and self-control). Multivariate analysis was performed. There was an overall significant main effect of gender and a significant 2-way interaction of gender*gpa. The gender*gpa interaction was disordinal and therefore the significant main effect was not further analyzed. The interaction was found to be significant in Handling Relationships and Self-Control. In Handling Relationships, GPA levels influenced male students. Male students in the 3.00-3.49 range scored lower than all other male students with GPA greater than 2.00. In self-control, GPA levels influenced female students. Female students with a GPA of 3.5-4.0 scored significantly higher than all other female students with GPA below 3.00.

Emotional Intelligence: The Effect of Gender, GPA, and Ethnicity

Introduction

Early attempts to determine intelligence were based on craniometry, influenced by a widespread belief in phrenology. When the focus shifted from what people looked like to measuring tasks they actually perform, Thorndike (1920) envisioned three kinds of intelligence: social, concrete, and abstract. Until recently, only concrete and abstract intelligence have been studied extensively. Interest in emotional intelligence, which may be thought of as social intelligence, was stimulated by a popular book by Goleman (1995). However, Salovey and Mayer (1990, Mayer & Salovey, 1997) have written more extensively about this subject.

While intelligence has been considered an important predictor of success in school and later life adjustment, academic intelligence is now considered by some to be a poor predictor of later life adjustment (Sternberg, 1993; 1996; Sternberg, Wagner, Williams, & Horvath, 1995). Gardner (1995) maintains that intelligence accounts for only 20% of the factors that determine life success. Herrnstein and Murray (1994) point out that "the link between test scores and those achievements is dwarfed by the totality of other characteristics [brought] ... to life" (p. 66).

Emotional intelligence involves the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth (Goleman, 1995; Mayer & Geher, 1996; Mayer & Salovey, 1997; Salovey and Mayer, 1990). According to Mayer and Salovey (1997), this definition connects intelligence and emotion because it combines the ideas that emotion makes thinking more intelligent and that one thinks intelligently about emotions. From this point of view, a person with these abilities is considered a well-adjusted and

emotionally skilled person; the lack of these abilities renders a person socially and emotionally handicapped.

Relevant cross-cultural studies on emotions, feelings, and some behaviors have been conducted by several researchers (Bagley, 1995; Berry, 1991; Ollendick, Yang, King, Dong, & Akande, 1996; Shiang, Blinn, Bongar, Stephens, Allison, &Schatzberg,1997; Witkin, 1978). The topics range from cultural differences in fear, field dependence and independence, to suicide and life-threatening behaviors.

Gender differences in intensity of emotional experience have been reported by Grossman and Wood (1993). According to their work females experience personal emotions of greater intensity than males. No gender differences were found in self-reported emotions. Trobst, Collins, and Embree (1994) found that women tend to be more supportive than men and that gender effect is largely mediated by empathy.

Women seek social support, suing emotion-focused coping with their moods to a greater extent than men. Men are more problem-focused in coping strategies than women. Miller, Silverman, and Falk (1994) have documented gender differences in emotional development. Women score high on emotional potential and level on emotional development. Men are higher on intellectual potential. Sutarso, Baggett, Sutarso, and Tapia (1996) reported that there was not enough evidence to affirm that there is an effect of GPA on compassion/empathy, self-awareness/self-control, and attunement, the three factors of emotional intelligence considered in that study. That study also gives evidence that there is an effect of the variable gender on the three factors of emotional intelligence.

While the literature shows that emotions and emotional intelligence are important, there is a paucity of research about the different factors that influence emotional intelligence or an

understanding of how they affect life. The purpose of this study was to examine the effect of gender, GPA, and ethnicity in emotional intelligence as measured by the Emotional Intelligence Inventory Revised (Tapia & Burry-Stock, 1998).

Method

Subjects

The subjects were 319 high school students from a private, bilingual college preparatory school in Mexico City, Mexico, accredited by The Southern Association of Colleges and Schools. The high school has approximately 720 students; each grade has approximately 180 students. The students are bilingual, speaking English and Spanish. The school population consists of Mexicans, Mexican-American (born in Mexico with at least one American parent), Americans (children with parents working for international companies of for the United States Embassy), and other nationalities (children with parents working for international companies or different embassies). Most of the students were from high-income families. One hundred sixty-two subjects were boys, and 157 subjects were girls. All the subjects were juniors and seniors.

Seventy percent of the students were Hispanic. Twenty percent were Euro-American and 6% were Asian. There were three Native Americans in the sample, and nine subjects were of other ethnic backgrounds. Of the 162 boys, 72 were juniors and 90 were seniors. Seventy one percent were Hispanic, 20% Euro-American, and 6% Asian. Of the 157 girls, 85 were juniors and 72 were seniors. Seventy percent of the girls were Hispanic, 20% Euro-American, and 7% Asian.

Materials

The Emotional Intelligence Inventory Revised (EII) is a 41-item scale. The items were constructed using a Likert-format scale of five alternatives for the responses with anchors of 1: never like me, 2: occasionally like me, 3: sometimes like me, 4: frequently like me, and 5: always like me. The score was the sum of ratings.

A Student's Demographic Questionnaire was also used. This questionnaire consisted of five questions. The purpose of these questions was for identifying the gender, grade level, GPA, and nationality-ethnic background of the student.

Procedure

The mathematics teachers administered the EII and the Student's Demographic Questionnaire to the subjects during their classes. Directions were provided in written form, and students recorded their responses on computer scannable answer sheets.

Results

Tapia (2001) found a four-factor solution from an exploratory factor analysis with maximum likelihood method of extraction and a varimax, orthogonal, rotation. The names for the factors reported in Tapia (2001) were Empathy, Utilization of Feelings, Handling Relationships, and Self-Control. Based on that factor analysis, the 41 items were classified into four categories each of which was represented by a factor. A composite score for each category was calculated by adding up all the numbers of the scaled responses to the items belonging to that category.

The data were analyzed by using multivariate factorial model with the four factors as dependent variables: (1) Empathy, (2) Utilization of Feelings, (3) Handling Relationships, and

(4) Self-Control and three independent variables: (1) gender, (2) ethnicity, and (3) GPA. Multivariate analysis of variance (MANOVA) were performed by using SPSS.

The linear model was written as, EMP UF HR SC = GEN + ETH + GPA + GEN*ETH + GEN*GPA + ETH*GPA + GEN*ETH*GPA where

EMP = Empathy

UF = Utilization of Feelings

HR = Handling Relationships

SC = Self-Control

GEN = Gender

ETH = Ethnic background

GPA = Cumulative High School grade point average

Data were analyzed testing for interaction effect and main effect at the .05 level. Data analysis indicated that the three-way interaction effect of the three variables GEN*ETH*GPA on the four dependent variables Empathy, Utilization of Feelings, Handling Relationships, and Self-Control (Wilks's Lambda F= 1.012, $p < .45$). Hence, it was concluded that there was not enough evidence to indicate a three-way multivariate interaction.

The analysis showed that the two-way interaction effect of GEN*GPA and the main effect of gender were significant. Table 1 shows F, p, and eta squared values for the interactions and the main effects. The eta squared value for GEN*GPA had small effect size, and the eta squared value for Gender had a medium effect size. The GEN*GPA interaction was disordinal and therefore the significant main effect was not further analyzed. Table 2 shows that the interaction of gender by gpa was significant for handling relationships and self-control.

Table 1

Interaction and Main Effects Tests for EMP UF HR SC = GEN + ETH + GPA + GEN*ETH + GEN*GPA + ETH*GPA + GEN*ETH*GPA

Effect	Value	F	Hypothesis df	Error df	Sig.	Eta Squared
GEN	.932	5.217	4.000	284.000	.000	.068
ETH	.946	1.324	12.000	751.685	.200	.018
GPA	.934	1.226	16.000	868.272	.241	.017
GEN*ETH	.960	.981	12.000	751.685	.465	.014
GEN*GPA	.917	2.095	12.000	751.685	.015	.029
ETH*GPA	.838	1.166	44.000	1088.468	.215	.043
GEN*ETH*GPA	.919	1.012	24.000	991.968	.447	.021

Table 2

Grade Level by Achievement Interaction Tests of Between-Subjects Effects

	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
EMPATHY	64.447	3	21.482	.609	.609	.006
UTILIZATION OF FEELINGS	172.418	3	72.263	1.639	.110	.017
HANDLING RELATIONSHIPS	420.451	3	140.150	4.827	.003	.048
SELF-CONTROL	251.676	3	83.892	2.830	.039	.029

The gender by GPA interaction effect was analyzed using a simple main effects analysis for handling relationships and self-control. To test for the simple effects separate univariate ANOVAs were conducted with GENDER and GPA as the independent variables.

Table 3 shows that GPA levels influenced Handling Relationships for boys, $F(4,310) = 2.567$ $p < .038$. But GPA did not influence girls $F(3, 310) = .746$ $p < .525$. Table 3 also shows that GPA levels influenced Self-control for girls. $F(3,310) = 2.827$ $p < .039$ but it did not influence boys, $F(4, 310) = 1.515$ $p < .198$. The F tests the effect of GPA. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Table 3

Univariate Tests of Simple Effects of GPA within Gender

GENDER	Source	Sum of Squares	df	Mean Square	F	Sig.	Eta sqaured
Dependent Variable: HANDLING RELATIONSHIPS							
Boys	Contrast	302.071	4	75.518	2.567	.038	.032
	Error	9120.491	310	29.421			
Girls	Contrast	65.829	3	21.943	.746	.525	.007
	Error	9120.491	310	29.421			
Dependent Variable: SELF-CONTROL							
Boys	Contrast	181.821	4	45.455	1.515	.198	.019
	Error	9299.094	310	29.997			
Girls	Contrast	254.366	3	84.789	2.827	.039	.027
	Error	9299.094	310	29.997			

The significant simple main effects of achievement were further analyzed by pairwise comparisons. Table 4 shows estimated marginal means of handling relationships and self-control for GPA within gender.

Boys with GPA 3.5-4 (M= 33.16 , S.E. .974) and Boys with GPA between 2.00-2.49 (M= 31.83 S.E. = .904) scored higher on Handling Relationships than Boys with GPA between 3-3.49 (M= 29.13 S.E. = .904). Boys with GPA between 2.5-2.99 scored marginally significantly higher than Boys with GPA between 3-3.49.

Girls with GPA 3.5-4 scored higher on Self-control than girls with GPA between 2.5-2.99. and marginally significantly higher than girls with GPA between 2.0-2.49.

Table 4

Comparisons of Estimated Marginal Means of Handling Relationships and Self-Control by GPA within Gender

		HANDLING RELATIONSHIPS	SELF-CONTROL
Boys	3.5 – 4.0	33.161	30.78
	3.0 – 3.49	29.128	32.09
	2.5 – 2.99	31.250	30.76
	2.0 – 2.49	31.833	30.59
	Less than 2.00	31.750	not observed
Girls	3.5 – 4.0	31.45	32.722
	3.0 – 3.49	29.36	31.208
	2.5 – 2.99	30.36	29.348
	2.0 – 2.49	25.25	29.955
	Less than 2.00	30.27	not observed

Conclusions

The multivariate data analysis indicated that the three way interaction effect of the three variables Gender*Ethnicity*GPA to the four dependent variables empathy, utilization of feelings, handling relationships, and self-control was insignificant. The data suggested that there was enough evidence to say that the two-way interaction effect of Gender*GPA and the main effect of gender were significant.

The Gender*GPA interaction was analyzed and found to be significant for handling relationships and self-control. The gender by GPA interaction effect was analyzed using a simple main effects analysis of GPA within gender for handling relationships and self-control. GPA levels influenced handling relationships in male students, but GPA levels influenced self-control in female students.

The significant simple main effects of achievement were further analyzed by pairwise comparison. There was enough evidence to show that male students in the 3.00-3.49 range scored lower in handling relationships than all other male students with GPA greater than 2.00. Female students with a GPA of 3.5-4.0 scored significantly higher in self-control than all other female students with GPA below 3.00.

It is important to note that the subjects in this study were atypical because they all attended a private school, were from privileged backgrounds, and from high socio-economic families. The school was patterned on an American high school curriculum and organization, but the majority of students were Hispanic and there were far fewer Anglo and Asian students.

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